Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFT390604A2
Series

DESIGNER'S DATA SHEET

Dual Microminiature Package
400 mA 60 Volts
NPN/PNP Transistor

Part Number / Ordering Information [1/]

SFT390604A2

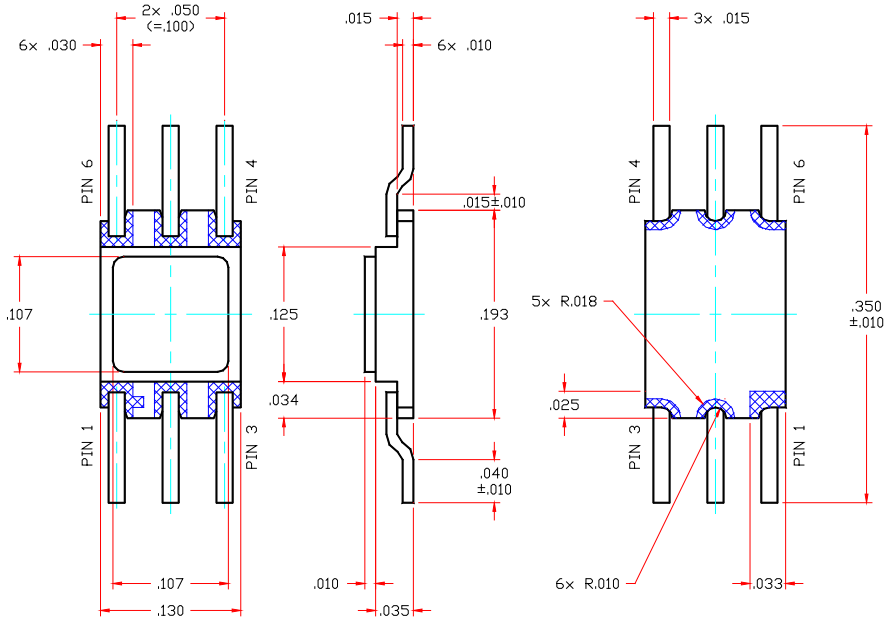
Screening [2/]
- ___ = Commercial
- TX = TX Level
- TXV = TXV Level
- S = S Level

Package GW = Gullwing

Features:
- High Speed Switching Transistor
- Multiple Devices Reduce Board Space
- High Power Dissipation: Up to 600 mW / device
- TX, TXV, S-Level screening available
- Replaces both 2N3906AU (PNP) & 2N3904AU(NPN) in one package

Maximum Ratings (per device)	Symbol	2N3906 (PNP) Value	2N3904 (NPN) Value	Unit
Collector – Emitter Voltage	V_{CEO}	40	40	**V**
Collector – Base Voltage	V_{CBO}	40	60	**V**
Emitter – Base Voltage	V_{CBO}	5	6	**V**
Continues Collector Current	I_C	200	200	**mA**
Power Dissipation @ T_C = 25°C	P_D	600	600	**mW**
Operating & Storage Temperature	**Top & Tstg**	-65 to +200	-65 to +200	**°C**
Maximum Thermal Resistance (Junction to	$R_{\theta JC}$	0.29	0.29	**°C/mW**

Gullwing (GW)



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: TR0036C	DOCX

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Electrical Characteristic [4/ 5/]		Symbol	2N3906 (PNP) Limit	2N3904 (NPN) Limit	Unit
Collector – Emitter Sustaining Voltage	I_C = 1 mA	**BV_{CEO}**	40 min	40 min	**V**
Collector – Base Breakdown Voltage	I_C = 10 µA	**BV_{CBO}**	40 min	60 min	**V**
Emitter – Base Breakdown Voltage	I_C = 10 µA	**BV_{EBO}**	5 min	6 min	**V**
Collector Cutoff Current	Vce = 30 V, Vbe = 3.0 V	**I_{CEX}**	50 max	50 max	**nA**
Collector Cutoff Current	Vcb = -30 V	**I_{CBO}**	50 max	50 max	**nA**
Emitter Cutoff Current	Veb = -3.0 V	**I_{EBO}**	50 max	50 max	**nA**
DC Forward Current Transfer Ratio*	V_{CE} = 1.0V, I_C = 0.1 mA V_{CE} = 1.0V, I_C = 1.0 mA V_{CE} = 1.0V, I_C = 10 mA V_{CE} = 1.0V, I_C = 50 mA V_{CE} = 1.0V, I_C = 100 mA	**H_{FE}**	60 min 80 min 100 - 300 60 min 30 min	40 min 70 min 100 - 300 60 min 30 min	
Collector – Emitter Saturation Voltage*	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA	**$V_{CE(Sat)}$**	0.25 max 0.40 max	0.20 max 0.30 max	**V**
Base – Emitter Saturation Voltage *	I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA	**$V_{BE(Sat)}$**	0.65 to 0.85 0.95 max	0.65 to 0.85 0.95 max	**V**
Frequency Transition	V_{CB} = 20V, I_C = 20mA, f = 100 MHz	**f_T**	250 min	300 min	**MHz**
Output Capacitance	V_{CB} = 10V, f = 1MHz	**c_{ob}**	4.5 max	4.0 max	**pF**
Input Capacitance	V_{EB} = 0.5V, f = 1MHz	**c_{ib}**	10 max	8.0 max	**pF**
Switch Times **Turn-on Delay Time** **Rise Time** **Storage Time** **Fall Time**	Vcc = 3 V, IC = 10 mA IB1 = 1 mA, IB2 = -1 mA Vbe(off) = 0.5 V	**td** **tr** **ts** **tf**	35 max 35 max 225 max 75 max	35 max 35 max 200 max 50 max	**nsec**
Small Signal Current Gain (f = 1 khz)	V_{CE} = 10V, I_C = 1.0 mA	**h_{fe}**	100 - 400	100 - 400	
Noise Figure	Ic = 100 uA, Vce = 5 V, Rs = 1.0 kΩ, f = 1 khz	**NF**	4.0 max	5.0 max	**dB**

NOTES:

* Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ For Package Outlines Contact Factory.

4/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

5/ Negative bias conditions for the PNP device type

Available Part Numbers:

SFT390604A2GW

PIN ASSIGNMENT						
Package	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**	**Pin 6**
	PNP Device			NPN Device		
GW	Collector	Base	Emitter	Collector	Base	Emitter

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